Deep Learning –HW#1

About the Assignment

The main aim of the assignment is to gain some fundamental knowledge about image processing and Python. Assuming that you are given a sample cat image as shown in Fig. 1.

Fig. 1: Original image.

Task1:

The original image is in the form of 600x800x3 format. At the end, you have to generate an image that looks like to below output.

Fig. 2: Output image.

As you can see that, the original image is divided into four quadrants.

   * The top left quadrant is the original image

   * The top right quadrant is the Value channel of HSV image,

   * The bottom left quadrant is the Lab channel of Lab image,

   * The bottom right quadrant is the Blue channel of RGB image,

You should resize the original image, with ratio of 0.5. Find HSV image, Lab image by using RGB image. Finally, combine them as a single image that given as output image in Fig. 2. Note that, the size of output and original cat images are equal.

Task2:

Flip original cat image horizantaly

Rotate original cat image with 90 degree.

Rotate original cat image with 45 degree.

Randomly make zeros for a 100x100 region of original cat image.

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Task3:

Write an algorithm to count the number of blue x in this image.

Write your code in Python colab.

Send your code and report as zip. Yourname-surname.zip